Chapter 10
MANAGEMENT ACCOUNTING AND PERFORMANCE MEASUREMENT SYSTEMS

Key Learning Objectives

By the time you have finished studying this chapter, you should be able to:

- explain the need for effective performance measurement in all organisations;
- discuss the influence that the organisation's structure and culture have on its performance measurement systems;
- calculate and interpret commonly used performance measures;
- describe the influence of particular contemporary environments on performance measurement;
- outline the effects of interdivisional transfers on performance measurements;
- describe and apply strategically focused performance measurement techniques.

The Need for Effective Performance Measurement Systems

In earlier chapters we have explored the basic need for accounting control systems and considered and applied some common management accounting techniques. As we saw, management accounting activity is composed of two closely intertwined components, planning and control, each of which can take place at the detailed, short-term level or at the more strategic, longer-term level. One element of management accounting activity that links these two components is that of performance measurement.

Without targets, deadlines and specified levels of acceptable performance, it is unlikely that organisational players will achieve objectives. Thus it is important to consider carefully a number of aspects of performance and performance measurement, such as those in Table 10.1. We will realise (if we take on board the principles of contingency theory) that there is no single way of measuring performance that will suit all organisations' needs

Table 10.1 Issues to consider in performance measurement

- *What* do we want to achieve?
- *When* do we want it to be achieved?
- *Which* performance measures are most closely related to achieving it?
- *What* resources do we wish to commit to achieving it?
- *What* are measuring?
  - The performance of the organisation, or part of it?
  - The performance of an individual, or group of individuals?
- *How* will we measure performance?
  - In terms of time?
  - In terms of cost incurred?
  - In terms of value created (however measured)?
  - In terms of quality?
  - In terms of quantity of inputs and/or outputs?
  - In terms of outcomes?
- For *whom* are we measuring performance?
  - Management?
  - Employees?
  - Owners?
  - Other stakeholders?
- At what level of *detail* do we wish to measure performance?
- *How often* should performance be measured?
- *What effects* on organisational behaviour might performance measurement have?

and circumstances. Thus there is a need to frequently monitor the continuing appropriateness of the performance measurement solution in place.

The area of performance measurement is a huge one with implications for all organisations. Entire texts are devoted to aspects of it, so constraints of space prevent more that a relatively limited coverage of it here. The reader would benefit from reference to more specialised texts for a deeper understanding. An excellent coverage of many aspects of performance measurement is given by Simons (2000), and a robust consideration of the human aspects of performance is presented by Emmanuel *et al*. (1990). Many of the academic accounting journals (such as *Accounting, Organizations and Society*) have devoted much space to this topic.

The Influence of the Organisational Environment on Performance Measurement Systems

We noted in earlier chapters that this area of research activity has been a very active one. The basic maxim of the contingency theory of management accounting could be expressed

Table 10.2 Some contingent factors for consideration

The environment

- Predictability
- Competition
- Number of products
- Market hostility

Organisational structure

- Size
- Interdependence
- Decentralisation
- Resource availability

Technology

- Nature of the production process
- Degree of routine
- Understanding of means–ends relationships
- Task variety

as 'one size does not fit all'. Hence the organisational and environmental settings within which the performance measurement system is to be applied must be considered carefully. Table 10.2 lists some of the key factors to be considered within such a decision (based on Emmanuel *et al.*, 1995).

An excellent model for consideration of the suitability of performance measures for a given environment is given in Simons (2000). Simons' model outlines the importance of the nature of the performance measure (objectivity, completeness, responsiveness) and identifies some dysfunctional effects that may occur.

Public Sector Aspects

The issues within performance measurement exist whatever the organisational setting, but there are, of course, variations of problems and practice across the various sectors. Within the public sector, the cultures that exist (service-focused, rather than profit-focused), the tendency toward bureaucracy, and the inertia that may derive from years of tradition and 'doing things in a certain way' may all mitigate against the successful application of business-based performance techniques and practices. Conversely, one should guard against automatically making the assumption that the public sector is somehow less efficient and/or less professionally managed than the private sector. Every case is different.

Lapsley (1996), in reflecting upon performance measurement in the public sector, identifies environmental factors that may influence the effectiveness of performance

measurement systems and considers some of the implications. In particular (see the Recommended Further Reading section at the end of this chapter), he focuses on five aspects of the interface between performance measurement systems and the organisation:

- reasons for increased focus on performance measures in the public sector (political, social and economic);
- problems of transferring 'business' performance measurement approaches to applications within the public sector;
- characteristics of performance measurement problems within the public sector;
- consideration of the optimal 'package' of performance measures within a given setting and the dangers of 'creeping bureaucratisation' and 'spin';
- reflections on the lessons learned to date (in the UK) and possible issues for the future.

People Aspects

An organisation may be defined as the sum of its parts, or as the combined effects of its features (e.g. its structure, its locations, its products or outputs and its people). The people involved in the work of an organisation will have a big effect on how that organisation operates, it effectiveness, it ability to respond to change and its relationships with the outside world. Coad (1999) draws attention to how the individual personal characteristics of management accountants may impact on the performance measurement activities of organisations. He suggests that such individuals may have either an orientation toward learning or toward performance, and that such leanings may impact upon how the performance measurement system is used, or its outputs acted upon or interpreted. He concludes that a *learning orientation* should be promoted and supported by managers as this is more likely to increase openness to new ideas for performance measurement that may increase its usefulness.

Divisionalisation and Decentralisation: Degrees of Responsibility and Power

Organisations may expand and/or grow more complex in a number of ways, for example in terms of:

- geographical expansion – to new regions, either at home or abroad;
- product range – adding new products/services, and/or though increasing the variations available of each product service;
- organisational structure – more complex structures, through specialisation of division by nature or function;
- diversity of customer range.

As organisations expand or become more complex, the practical difficulties of managing the organisation as a coherent whole, maintaining focus on the key organisational objectives, increase. The argument over whether organisations are most effective when managed as individual autonomous units or as large integrated networks continues and there appears to be a cyclical popularity of 'big (or small) is beautiful'.

Decentralisation and Divisionalisation

One of the key decisions to be made within any large organisation is the degree of autonomy to be allowed to individual organisational units. Where organisational units are allowed a high degree of autonomy, the organisation is said to be highly *decentralised*. Note here the difference between decentralisation (relating to the allocation of power/authority) and *divisionalisation* (relating to the fragmentation of an organisation without any necessary allocation of power). Hence, an organisation may consist of many divisions but none of these division may be able to take any important decisions for themselves – such an organisation would *not* be said to be decentralised.

Table 10.3 identifies some of the performance measurement issues that may arise as an organisation becomes increasingly decentralised. In addition to such issues, there is another major area for attention where there is a degree of trading/service provision between the divisions comprising the organisational whole. Where such interdivisional trading or service provision (or 'intragroup') exists, decisions must be made about the prices, known as *transfer prices*, that the 'selling' division should charge to the 'buying' division. Given that, in many large international organisations, the divisions will be subsidiary companies of a corporate group located in overseas countries and subject to different tax laws, these decisions on interdivisional transfer prices may have taxation, legal and other political and social implications.

Transfer Pricing Considerations

When determining transfer prices, a number of questions need to be asked:

- On what basis should the transfer price be set?
- Who should set the transfer price?
- What are the likely behavioural effects of the transfer prices determined?
- How often should the transfer prices be reviewed?

A number of transfer pricing bases have been suggested and/or applied over the years by organisations. Some of these are illustrated and some of their advantages/disadvantages described in Table 10.4.

Much of the seminal work on transfer pricing considerations was carried out in the 1980s, and the work of Emmanuel and Gee and of Spicer is particularly respected in this

Table 10.3 Issues that may arise as an organisation becomes increasingly decentralised

- How to maintain focus on the organisations' central objectives
- How to maintain adequate communications among divisions and between division and centre
- How to decide on the most appropriate performance measures
- How to avoid over-proliferation of performance measures
- How to ensure that performance measures are used properly, followed up and action taken
- What mix to use of financial and non-financial performance measures
- How to obtain the right mix of long-term and short-term focused performance measures
- How to measure the effectiveness of the performance measures used
- How often to measure performance
- Who should administer the performance measurement system and from where
- How to ensure fairness and consistency of approach across the organisation
- How to minimise the dangers of players' using the performance measurement system to their advantage
- How to counter the effects (in geographically-spread organisations) of cultural differences
- Whether to use the same performance measures across the organisation, or to 'customise' according to local conditions
- How to maintain/increase the level of motivation of the workforce via the performance measurement system
- How to and whether to create and maintain a system of rewards (and/or penalties) related to the performance measurement system
- How to ensure that targets and benchmarks remain appropriate and at the right level

area. Emmanuel and Gee (1982) argue for the use of a market-based transfer pricing approach on the grounds of its being the fairest approach and being verifiable by managers. They construct a model of a 'fair transfer price' based on a two-instalment transfer charge (i.e. a two-part tariff approach) but recognise and discuss a range of shortcomings of their model. Spicer (1988) investigates the various approaches to the transfer pricing issue. He analyses the work of Watson and Baumler, among others, and, using a contingency theory based approach, attempts to place transfer pricing within a wider organisational context and prepares the ground for further empirical research (see also Chapter 8 above).

What appears to be true, as in many other areas of management accounting control, is that there is no single transfer pricing approach that will be optimal under all circumstances. Although some methods are easy to use, they may not yield results that are optimal for the organisation. Other methods may be theoretically sound but may be impractical to use in real life, or the theoretical models on which they are based may be founded on unrealistic assumptions. Other models, based on the existence of markets, may falter where there exist imperfect or sparse markets, or where the data collection and analysis requirements are resource-intensive. All in all, the best method to apply will depend on circumstances and may change over time.

Table 10.4 Some possible transfer pricing bases and some advantages/disadvantages

Transfer pricing basis	Basis of calculation	Advantages	Disadvantages/issues
Cost-based (i.e. 'cost-plus')	The transfer price is set at the cost of producing the intermediate product, or a relatively arbitrary percentage 'mark-up' is added to the cost	• Easy to calculate and administer • Easy to understand	• Does not reflect the economic reality • Difficulty in deciding to which 'cost' (i.e. marginal, variable, full, opportunity) the mark-up should be applied • Arbitrariness of the mark-up • Difficulty in deciding by whom and how the mark-up should be established • May lead to unintended behavioural consequences
Market-based	Transfer prices are set by direct reference to equivalent prices within the external markets	• Transfer prices should be seen to be relevant by users • Easier for proponents to justify the use of the transfer prices as 'based on fact'	• More than one market may exist, or the markets identified may be imperfect • Data collection and analysis may be resource–intensive as markets may be volatile and complex • Differences will exist between external and internal markets and so users may complain that the transfer prices do not reflect the internal organisation realities
Mathematically based	Transfer prices are set via a process of: • identifying the variables and constraints within the decision package • formulating these as a mathematical model • performing mathematical iterations in order to produce a theoretically optimal solution	• Theoretically sound • The process of mathematical formulation helps to clarify the factors within the decision • A clear, prescriptive solution is derived upon which to take action	• Requires refined mathematical and analytical skill • Is dependent upon a full identification of the relevant factors • Difficult for non-technical users to understand • May give a theoretical solution that ignores some aspects and thus leads to unexpected consequences

(Continued)

Table 10.4 Continued

Transfer pricing basis	Basis of calculation	Advantages	Disadvantages/issues
Negotiated	• The transfer price is settled by agreement between the buying and selling division	• Should, by definition, lead to a transfer price that is acceptable to both buying and selling divisions	• May lead to protracted and bitter arguments over what is an acceptable price • The negotiated price, while acceptable to both parties, may not be the best price for the company as a whole • Time-consuming and administratively expensive
Two-part tariff	The transfer pricing mechanism involves two components: • a 'lump sum' amount, paid over after the period end, to cover an appropriate amount of the fixed costs of the supplying division; • a 'per unit' amount to cover the supplying division's variable costs and a profit margin Both components of the pricing mechanism are subject to negotiation and may be adjusted to take account of extra information after the period	• Greater agreement between the divisions involved • Allows divisions to get on with the business of transfer pricing while allowing some negotiation before final settling of prices • Should be seen as fair as specific aspects of cost are identified and covered by the transfer price	• May be time-consuming and costly to administer • The subsequent negotiations may be difficult • May not lead to the most economically sound transfer price for the company as a whole
Dual pricing	A system whereby, because of difficulties within the negotiation process, two separate transfer prices are set: a 'buying price' used for the buying division, and a different 'selling price' for the selling division	• Keeps both divisions happy, assuming that the 'buying' and 'selling' pries are accepted as fair by the respective divisions	• Unlikely to result in the optimal transfer price for the company as a whole • May still require extensive negotiation with each division (or the imposition of a transfer price, with adverse behavioural consequences) • Will require reconciliation exercise at the period end for accounting purposes

EXHIBIT 10.1

Transfer Pricing Example

An organisation has two main divisions, S and B. Division S makes an intermediate product that it could sell in the external market, but also sells this intermediate product to B. Division B buys this intermediate product from S and processes it further, producing a final product that it sells to the external market. Relevant data are as follows:

Division S sells 1000 units per period to Division B	
Division S:	£
Variable cost per unit of intermediate product	10
Fixed costs per period	15,000
Market price per unit if intermediate product is sold in the external market	40
Division B:	
Divisional B variable costs per unit processed	5
Fixed costs per period	10,000
Final market price for final product	60

The head office of the company has decided that the divisional managers' remuneration will be based upon the profit performance of their divisions.

Using the data above, let us consider some possible scenarios. In *scenario 1*, the head office decides to set the transfer price for the intermediate product at a level which represents the external intermediate product market price, adjusted for internal conditions, giving a transfer price of £37 per unit (i.e. the external market price of £40 reduced by £3 per unit to reflect savings in advertising, etc.). The divisional results under these conditions are:

Division S:	
	£/unit
Divisional variable costs	10
Selling price = transfer price	37
Contribution per unit	27
No. of units transferred per period	1,000
Total contribution per period	£27,000
Divisional fixed costs	£15,000
Divisional profit	£12,000

Division B:

	£/unit
Divisional variable costs	5
+ Transfer price inwards	37
Total variable cost per unit	42
Selling price (final product)	60
Contribution per unit	18
No. of units transferred per period	1,000
Total contribution per period	£18,000
Divisional fixed costs	£10,000
Divisional profit	£8,000

Total company profits = £12,000 + £8,000 = £20,000

The imposition of the transfer price will result in a number of effects:

- Division S's manager may be demotivated as the transfer price is below that which it can achieve in the market. If Division S has a large potential external market for the intermediate product, then every unit it transfers to Division B loses it a potential £3 contribution. This £3 is effectively transferred to Division B, to the advantage of Division B's manager.
- Division B's manager may feel that, although Division S sells it the intermediate product at £37, Division B could buy externally a perfectly adequate substitute for less than £37. Division B's manager therefore feels that its production costs are unnecessarily high and thus its profit (and its manager's remuneration) depressed.
- The managers of each division are demotivated because they feel that they have no real control over their profits (as, although the transfer price has been based on an economically sound market price, it has been dictated from above, by head office staff).

In *scenario 2*, the head office decides that an arbitrary transfer price £35 per unit should be used. The divisional results under these conditions are:

Division S:

	£/unit
Divisional variable costs	10
Selling price = transfer price	35
Contribution per unit	25
No of units transferred per period	1,000
Total contribution per period	£25,000
Divisional fixed costs	£15,000
Divisional profit	£10,000

Division B:

	£/unit
Divisional variable costs	5
+ Transfer price inwards	35
total variable cost per unit	40
Selling price (final product)	60
Contribution per unit	20
No of units transferred per period	1,000
Total contribution per period	£20,000
Divisional fixed costs	£10,000
Divisional profit	£10,000

∴ Total company profits = £10,000 + £10,000 = £20,000

As under scenario 1, the total company profit remains at £20,000. All that has changed is the allocation of the divisional profits. Under scenario 2, as compared with scenario 1, Division S ends up with £2,000 profit less and Division B is allocated an extra £2,000 profit.

Evidently, this reallocation of profits will be seen as more unfair (given its arbitrariness) than scenario 1. Division S's manager will feel particularly aggrieved as her/his profit has been decreased at a stroke by an arbitrary decision by head office.

Under *scenario 3*, the managers of divisions S and B have negotiated a transfer pricing agreement between themselves. The agreement is that each unit transferred will be charged to Division B at Division S's variable cost plus a mark-up of 80%. Additionally a lump-sum transfer of 80% of Division S's actual fixed costs will be made at the end of the period. The variable cost-plus charge will be revisited and renegotiated retroactively at the end of each period to take account of unexpected circumstances. The divisional results under these conditions are:

Division S:

		£/unit
Divisional variable costs		10
Selling price = transfer price [= £10 + 80%]		18
Contribution per unit		8
No. of units transferred per period		1,000
Total contribution per period		£8,000
Divisional fixed costs	£15,000	
Less fixed cost transfer to Division B	£12,000	
		£(3,000)
Divisional profit		£5,000

Division B:

	£/unit
Divisional variable costs	5
+ Transfer price inwards	18

Total variable cost per unit		23
Selling price (final product)		60
Contribution per unit		37
No. of units transferred per period		1,000
Total contribution per period		£37,000
Divisional fixed costs	£10,000	
Plus lump sum transfer inwards	£12,000	
		£(22,000)
Divisional profit		£15,000

∴ Total company profits = £5,000 + £15,000 = £20,000

Here, again, we see the same overall company profits of £20,000 but now Division S has only £5,000 of these.

This reallocation of profits between divisions may have a number of effects depending upon a number of factors:

- the extent to which the negotiation was undertaken without the interference of head office;
- the extent to which the pricing structure represents, overall, the external market;
- the basis on which the managers' remuneration is related to the absolute size of the divisional profits earned.

All of the transfer pricing approaches taken within these scenarios have a degree of artificiality and bias. Additionally, the assumption has been made that the total production of Division S will be taken up (and must be taken up) by Division B. In reality, the degree of authority that the divisional managers have to decide whether to transfer internally or to buy/sell externally will bring into play a range of opportunity costs to be taken into account.

We have seen that interference by head office in the transfer price setting will be seen by divisional managers as removing some of their independence and as reducing their ability to influence their remuneration. One possible solution might be to remove the link between performance, as measured by divisional profits, and remuneration. Maybe an increased focus on overall, more strategic and qualitative objectives, rather than on short-term profitability might enhance organisational coherence.

Practical Realities and Theoretical Ideals

Any of the transfer pricing approaches outlined in Table 10.4 may be found in practical situations. Additionally, there are some further practical considerations that affect all of the approaches:

- Where the selling of the intermediate product, or service, has implications for taxation, cross-border regulations, political or social aspects, then the transfer prices should be set in such a way as to comply with the rules in place in the external environment.
- There is always a balancing act to be achieved when setting a transfer price:
  - The economically optimal (ideal theoretical) transfer price is unlikely to be that achieved through practical means.
  - Theoretical perfection may lead to the transfer mechanism's being difficult to understand for many organisational players.

- There is a payoff between accuracy and administrative cost.
- Inappropriate transfer prices (or transfer prices that are seen to be inappropriate) are likely to lead to dysfunctional actions by those affected.

Accounting Measures of Performance and Financial Ratio Analysis

A large range of individuals and organisations might be interested in the performance of an organisation. Table10.5 suggests some of the most significant interested parties. These

Table 10.5 Some of the parties interested in performance information

Type of organisation	Interested parties
Small/medium company	Shareholders Management Employees Suppliers Customers
Large listed company or multinational/global group	As small/medium companies *plus* Government agencies Central government Analysts Credit rating agencies International organisations
Central government organisation	Managers Voters (the public) Politicians Employees Central government of other countries/states International organisations
Local government organisation	Managers Employees Central government Other local government organisations Local taxpayers Service users Providers of services to local government
Charity	Managers Donors and benefactors Employees Beneficiaries and representative bodies Regulators Central government

would in most cases be interested in both financial performance measures (e.g. profit margins, stock turnover rates, return on capital) and non-financial performance measures (e.g. productivity, market share, staff turnover). Each user will, of course, have his/her own areas of interest and so you might wish to give some thought to the types of measures that each would apply.

So what are the actual performance measures that organisations might use?

Exhibit 10.2 illustrates some of the 'standard' *financial* performance measures that might be used.

EXHIBIT 10.2

Illustration of the Use of Financial Performance Measures

Holby plc has obtained the following data from its management accounting system, relating to the previous period:

Profit and loss account data

	£000	£000	£000
Sales			1,000
Cost of sales:			
Opening raw materials stocks	50		
Purchases	100		
Closing raw materials stocks	(70)		
Materials cost of production		80	
Direct labour	100		
Production overheads	250		
	350		
Opening work in progress (WIP) stock	80		
Closing WIP stock	(100)		
Cost of goods produced	(20)	410	
Opening stock of finished goods	120		
Closing stock of finished goods	(90)		
	30		
Cost of sales			440
Gross profit			560
Administration overhead			(250)
Selling and distribution overhead			(180)
Net profit			130

Balance sheet data:

	£000	£000	£000
Fixed assets			1,000

Current assets:			
Stocks (as above)	260		
Trade debtors	200		
Cash and bank	100		
		560	
Current liabilities:			
Creditors		50	
Net current assets			510
Total assets less current liabilities			1,510
Long-term loan			500
Net worth			1,010

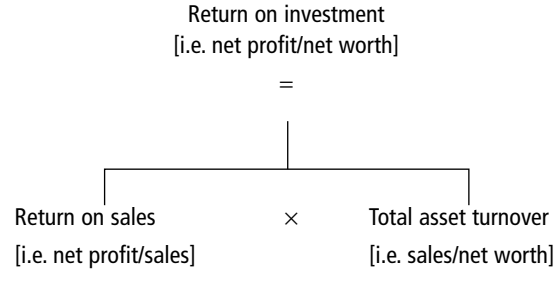
When addressing the matter of financial performance measures, we need to ask who wants the information. The *shareholders* of the company will primarily want to know how their investment in the company is performing. Such information is not available directly from the type of management accounting data given above. To answer the shareholders' questions we would need to have data on the company's share price, its price–earnings ratio, earning per share, and so on. Such analysis is possible only where the company has a market price for its shares. This 'higher level' analysis is covered in texts on financial management. We can, however, address the question of the company's performance indirectly by analysing its apparent performance based on its accounting data from its internal management accounting system.

A number of measures are available concerning return on investment, depending upon how we define 'return' and how we define the investment base. 'Return', for instance, might be defined as gross profit, net profit, or sales income. 'Investment' might be defined as total assets, current assets, net assets etc.

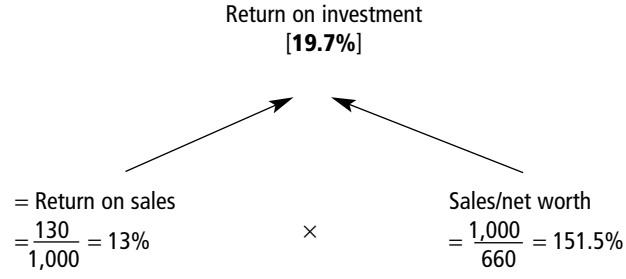
The most probable 'overall' measure of return on investment, given the above data, would be

$$\frac{\text{Net profit}}{\text{Net worth}} = \frac{130}{660} = 19.7\%.$$

We could then ask what caused the return on investment to be 19.7%.
One approach here is to apply what is sometimes called the 'pyramid' or 'hierarchy' of ratios:



So, for this example, the calculations are:



We could now ask further questions such as: What caused the 'return on sales' to be 13%? What caused the 'sales/net worth' to be 151.5%? 'How do these performance figures compare with other time periods' performance and comparable companies' results? The last two questions are very useful and important in practice, although in many cases the necessary comparative data may not be available. Let us concentrate on the first two questions.

We begin with the return on sales. The 'return' is composed of two elements – sales and cost of sales. Focusing on the cost aspects as a proportion of sales income, a number of subsidiary ratios can be calculated:

$$\frac{\text{Material cost of sales}}{\text{Sales}} = \frac{80}{1000} \times 100 = 8\%,$$

$$\frac{\text{Production overhead}}{\text{Sales}} = \frac{250}{1000} \times 100 = 25\%,$$

$$\frac{\text{Gross profit}}{\text{Sales}} = \frac{560}{1000} \times 100 = 56\%,$$

$$\frac{\text{Administration overhead}}{\text{Sales}} = \frac{250}{1000} \times 100 = 25\%,$$

$$\frac{\text{Selling and distribution overhead}}{\text{Sales}} = \frac{180}{1000} \times 100 = 18\%.$$

Note that all of these ratios are only of use in a comparative sense. The figures calculated have no intrinsic information value but, to become useful, must be compared with similarly calculated figures for previous periods or other divisions, subsidiaries, and so on.

Concentrating on the make-up of the costs, a number of further ratios may be calculated, for example:

$$\frac{\text{Materials cost}}{\text{Total production cost}} = \frac{80}{410} \times 100 = 20\%$$

A number of similar ratios could be calculated concentrating on other cost aspects such as labour and overhead costs. Note that some of these costs will be the periodic costs (e.g. the materials cost of the goods produced in the period), whereas the total costs figure will be adjusted for the changes in work in progress stocks. Thus, for accuracy, care would need to be taken that costs are compared on a like-with-like basis.

Using a similar approach, the overall 'total asset turnover' ratio can be analysed into a number of subsidiary indicators:

$$\frac{\text{Sales (the 'fixed asset utilisation ratio')}}{\text{Fixed assets}} = \frac{1000}{1000} \times 100 = 100\%,$$

$$\frac{\text{Sales}}{\text{Stocks}} = \frac{1000}{260} \times 100 = 3.85 \text{ time per year, or } 365/3.85 = \text{a turnover of 96 days.}$$

Stock 'turnover rates' could be calculated for the different aspects of stocks:

Raw materials stock turnover =

$$\frac{\text{Raw materials stock (average)}}{\text{Raw materials purchases}} = \frac{60}{100} \times 365 = 219 \text{ days,}$$

$$\frac{\text{WIP stock (average)}}{\text{Cost of production}} = \frac{90}{410} \times 365 = 80 \text{ days,}$$

$$\frac{\text{Finished goods stocks (average)}}{\text{Cost of sales}} = \frac{105}{440} \times 365 = 87 \text{ days.}$$

Of course, with all the ratios above, we are comparing static, balance sheet figures, at a specific date, with profit and loss based figures that cover a period of time. Thus, the figures being compared are not on a strictly comparable basis and so the resultant ratios must be used with care. Also, naturally, various ideas will exist about the 'best' ways to calculate such performance indicators.

The figures calculated seem, however, to indicate that the company is taking a long time to pass its stocks through the system. All such stock is effectively 'money tied up' within the company and efforts to speed up the process of converting stocks into saleable goods and, eventually, cash must be beneficial.

One of the important aspects of a business that can be the 'make or break' of its success is the way in which it manages working capital and financing. For example, it will need to monitor cash flows to and from its debtors and creditors. Two *credit management indicators* are the following:

$$\text{'Debtors' turnover'} = \frac{\text{Average debtors}}{\text{Credit sales}} = \frac{200}{1000} \times 365 = 73 \text{ days},$$

$$\text{'Creditors' turnover'} = \frac{\text{Average creditors}}{\text{Credit purchases}} = \frac{50}{100} \times 365 = 183 \text{ days}.$$

Holby is taking around 2 months to collect from its debtors. Any improvements possible here will be rewarded by an earlier reinvestment of the cash received, thus giving further opportunities for making profits. (Note that, due to lack of data we have had to use year-end debtors and to assume that all sales were on credit.) Furthermore, Holby is taking 6 months to pay its creditors. This is, of course, a very poor state of affairs and, if the data are reliable, Holby is likely to be experiencing great problems with its supplier relationships. It could be, however, that the 'snapshot' figures used are untypical.

Two important *Working capital indicators* are:

$$\text{'Working capital ratio'} = \frac{\text{Current assets}}{\text{Current liabilities}} = \frac{560}{50} = 11.2 \text{ times}$$

$$\text{'Acid test'} = \frac{\text{Current assets} - \text{Stock}}{\text{Current liabilities}} = \frac{560 - 260}{50} = 6 \text{ times}$$

For safety reasons, we would hope that the level of current assets would cover the level of current liabilities (i.e. a ratio of 1). What is 'normal', however, depends on the industry sector's practices and economic conditions, therefore contextualisation is necessary. The 'acid test' attempts to be a more testing indicator by removing the 'cover' provided by stocks, a relatively illiquid asset. Finally, in this category, we have the

$$\text{'Cash operating cycle'} = \text{Total debtors' days} + \text{Total stock days} - \text{Total creditors' days}$$

$$= 73 + 219 + 80 + 87 - 183 = 276 \text{ days}$$

The company is taking around 276 days to convert its initial investments in stocks into cash!

The main *financing ratio* in use is the gearing ratio which may be calculated as:

$$\frac{\text{Fixed interest debt}}{\text{Shareholders' funds}} = \frac{500}{1010} \times 100 = 50\%.$$

A number of other versions of the calculation of this indicator will be found in other texts.

As we have noted above, the analysis must be used carefully and comparisons made to contextualise the data. Although the indicators calculated will have to be used carefully, they do at least provide a basis for further investigation and clarification. In the context of specific organisations, other quantitative indicators may additionally prove useful. They also provide data that may be useful in 'benchmarking' the organisation's performance against other similar organisations.

Non-Financial Aspects of Performance Measurement

All of the analysis above is *quantitative* in nature. But organisations are much more complex than the numerical data that may be utilised to describe them.

There has been an increasing tendency in recent years to turn attention towards the non-quantitative, *qualitative* side of performance measurement. There are various facets to this:

- the aspects of productivity, absenteeism, staff turnover, morale, public image, customer satisfaction, environmental responsibility, etc. Many of these aspects are, of course, people-focused in nature. Few, if any, of these areas are quantified easily in financial terms.
- the issue of separating the performance of *people* from the performance of departments, divisions, etc. A good manager, who makes a great effort and acts strategically, may have her/his true performance 'masked' by being situated within a division that performs poorly overall, when assessed according to the 'usual' financial performance indicators. It is thus important to attempt to isolate the actual performance of that manager and to reward it. Such an approach will be likely to involve the use of non-financial indicators.
- the issue of *input measures* as compared with *output measures*. The efforts of individuals form inputs into the organisational production processes. Most performance measures, however, tend to focus on outputs. There is thus the risk that the efforts that an individual makes will be hidden behind the multitude of complex events that take place in converting inputs into organisational outputs.
- the issue of *outputs* versus *outcomes*. In much of the literature discussing performance measurement in the public sector – (see, for instance, Lapsley (1996) – attention is

paid to the differences between outputs (the immediate products of an organisation, e.g. products made or services sold) and the outcomes of the organisation's activities (i.e. the longer-term effects, such as local levels of health as the result of a hospital's strategies). It is thus important that sufficient attention is paid to all aspects of performance and to recognise individuals' contributions to the organisation's success, both immediate and eventual.

Performance Measurement and Contemporary Organisational Environments

A wide range of organisational types exists. We looked earlier, in Exhibit 10.2, at typical financially based performance indicators that might be applied within a manufacturing organisation. What about service and public sector organisations?

The public sector operates in a rather different way from manufacturing organisations. Although a small number of public sector organisations act as semi-commercial organisations (e.g. nationalised industries), most public sector organisations have the provision of services as their prime objective, with cost and quality criteria acting as constraints. Naturally, then, performance measures used in such settings should focus upon these organisations' objectives and constraints.

Lapsley (1996) considered the 'state of play' of performance measurement in the UK public sector (see the recommended further reading section at the end of this chapter). Lapsley focused on five main areas:

- The rationale of performance measurement in the public sector – i.e. what was the driving force for performance measurement?
- Performance measurement in action – here Lapsley looked at some of the issues that arose when trying to apply business-based performance measures within a public sector setting and identified some suitable models, including the 'three Es' (see below).
- Performance measurement as a management process – including the use of 'checklists' and the problems of performance measurement systems' stifling innovation.
- Performance measurement in specific (nationalised) industries.
- Performance measurement in the future.

In his analysis, Lapsley draws attention to the problems of over-bureaucratisation, stifling of creativity, establishing valid and appropriate performance measures as well as considering others' ideas on what constitute 'ideal' models for performance measurement in this setting. Many of the issues that Lapsley discusses, however, are not peculiar to the public sector. The problems of performance measurement, although contingent upon organisational setting, technology and culture, are relatively consistent across organisational types.

One of the useful ideas that emerged from early developments in public sector performance management was a relatively simple one, which said that performance consisted of three main components:

- *Economy* – in simple terms, obtaining resources at the lowest possible price (obviously when pursuing this goal, the constraints of quality and timeliness will need to be considered).
- *Efficiency* – in simple terms, undertaking processes in ways that make the best use of available resources. Efficiency is thus a matter of maximising the outputs from the available inputs. Here, also, the constraints of required quality, timeliness, etc. must be taken into account.
- *Effectiveness* – in simple terms, the degree to which the organisation's objectives are achieved.

The 'three Es' are hierarchical in that efficiency will not be achieved without economy, and effectiveness will not be achieved without efficiency. However, being economical and efficient will not necessarily result in effectiveness. Why not?

As mentioned above, effectiveness is the degree to which the organisation's objectives are achieved. How we define effectiveness therefore depends upon how we define our objectives – broadly or narrowly, short-term or long-term, financial or non-financial, quantitatively or non-quantitatively.

How might a hospital apply the 'three Es'?

- *Economy* – an example might be that supplies (of pharmaceuticals, laundry services, staff costs, etc.) would be obtained at the lowest cost commensurate with required quality levels. Obviously, falling below the required quality could be disastrous within any of these criteria, and this failing would have a direct impact upon the hospital's overall effectiveness.
- *Efficiency* – the hospital will want to make best use of its resources. It will therefore make efforts to ensure that surgical procedures are carried out on time and quickly, to reduce the time that patients wait in hospital beds until their operations are carried out, to reduce the amount of time that patients spend in recovery wards before being discharged. Again, however, any overenthusiasm in these respects will lead to poorer health care and an increase in re-referrals, with consequent effects on overall effectiveness.
- *Effectiveness* – a big question for a hospital is 'how should effectiveness be defined. Simple measures such as 'number of operations carried out' or 'percentage reduction in waiting lists' are readily distorted by creative accounting and may not be directly linked to longer-term objectives such as improving the general level of health of the community served by the hospital. There is in this context, the need to distinguish between *outputs* (e.g. number of operations performed) and *outcomes* (improvements in health levels). One approach to this issue was found within UK health authorities that made, in the 1990s, an attempt to follow two linked objectives:

'adding years to life' (i.e. making people live longer via preventative and corrective medicine) and 'adding life to years' (i.e. improving the quality of people's lives via improving their general health and well-being). What was not done quite so successfully, however, was identifying appropriate performance measures that linked to these composite objectives.

Strategic Aspects of Performance Measurement – Taking a Broader View and Avoiding Short-Termism

Much has been written in recent years on the shortcomings of financially based and short-term focused performance measurement systems. Such systems, it is argued, increase the risks of taking a short-sighted view of the objectives and strategy of the organisation and thus increase the risk of a divergence between the actions of organisational players and those actions that are more likely to increase the overall longer-term effectiveness of the organisation.

Additionally, the organisational environment has changed markedly in recent years, and will continue to change, owing to changes in areas such as technology, communications and globalisation.

Kaplan (1983) – see the recommended further reading section at the end of this chapter – drew attention to the non-financial aspects of performance control, particularly the issues of *quality* and *stock levels*. He argues that the contemporary short production runs, flexibility, reductions in stock levels, technical innovation, supplier and customer relations, and efficiency must all be taken into account by the performance measurement system. He criticises the 'automatic' use of discounted cashflow narrowly (taking a narrow view of financial effects) without consideration of the broader issues involved in an investment decision which are, of course, more difficult to measure. He suggests that financial 'experts' have a tendency toward myopia and that reward systems should be tied to achieving strategic, rather than only financial goals – though this has the problem that shareholders tend to think in financial terms.

Otley (2001) argues that, by the mid-1980s, management accounting had become largely outdated and risked obsolescence. He indicates the importance of the strategic management accounting ideas of authors such as Johnson and Kaplan (1987) with their more forward-looking and market-focused emphasis, including the balanced scorecard (BSC). He also discusses the merits of the economic value analysis (EVA) technique, designed to increase 'shareholder value', and argues that such techniques as the BSC and EVA are most likely to be effective when used together. He identifies the need to recognise the increased application of strategic management accounting within the public sector (see Chapters 7 and 8 for more on Otley's work).

Cooper *et al*. (2002) note the popularity of shareholder value analysis (SVA) amongst blue chip companies (see also Chapter 3). They argue that SVA focuses on value drivers

but that SVA's potential benefits are not always realised in practice, as companies fail to put their faith in the use of the measure. Research by Cooper *et al*. established that a number of shareholder value based techniques, including EVA and SVA, were in use, although shareholder value was not always treated as the most critical issue. Interestingly, the use of SVA and similar techniques did not seem to have improved the profit performance of its users, although the researchers suggest that this may be the result of the relative infancy of such applications.

In Chapter 5 we discussed techniques such as activity-based cost management (ABCM), benchmarking, value chain analysis, the balanced scorecard, business process re-engineering and economic value analysis. It is not intended here to undertake further in-depth analysis of some of these strategic management accounting approaches.

Conclusions

This chapter has shown that:

- effective performance measurement is required in all organisations;
- an organisation's structure, culture and environment will have a direct effect on which performance measurement systems will prove most effective;
- performance measurement and transfer pricing are closely interrelated – the objectives of transfer pricing may have a distorting effect on performance measures;
- a range of strategically focused performance measurement approaches have been developed and promoted in recent years – these should be analysed carefully for their applicability in any given situation.

Summary

In this chapter we have considered some of the fundamental aspects of performance measurement in modern organisations. We have seen that the process of performance measurement requires careful consideration of a range of behavioural, organisational, environmental and strategic factors. As with all techniques that are dependent for their success upon a range of contingent factors, there is no 'right answer'. Thus, performance measurement is a process of learning and being flexible to change. This need for flexibility and learning has been a common theme throughout this book and it is particularly pertinent to the area of performance measurement. We have also given some attention to the more strategic approaches to performance measurement. As these new approaches are relatively untested, and because new approaches appear continuously in the accounting press, this is an area upon which you should keep a regular watch. Nevertheless, there is often a degree of 'the emperor's new clothes' about these new developments and there is always uncertainty as to which of such techniques will stand the test of time. You should therefore maintain a critical stance when considering such developments.

Recommended Further Reading

Lapsley, I. (1996) 'Reflections on performance measurement in the public sector', in L. Lapsley and F. Mitchell, *Accounting and Performance Measurement: Issues in the Private and Public Sectors*. London: Paul Chapman Publishing, pp. 109–128.

Lapsley addresses five main areas:

1. *Rationale of performance measurement in the public sector:*
   Lapsley asks why accountants and managers should focus on performance measures. He identifies forces such as fiscal pressures, perceived inefficiency, lack of clear 'commercial' objectives and the 'dependency culture'. He also expresses the opinion that Thatcherite views on the need for devolved management and accountability may have led to the proliferation of performance measurement activity in the public sector since the early 1980s.
2. *Performance measurement in action:*
   Lapsley explains the relevance of the public sector focus on the 'three Es' (effectiveness, efficiency and economy) as a market surrogate toward value-for-money in the public sector. He draws attention to the problems of complexity and definition that may occur in attempting to implement such performance measurement models. He comments on the questionable validity of transferring private sector models to the public sector, pointing to factors such as the problems of variation in practice (accounting 'noise') and the various possible models/frameworks, e.g. 'three Es', FEE and Mayston that may be put forward as 'optimal'.
3. *Performance measurement as a management process:*
   Lapsley gives examples of checklists, such as Likierman's '20 lessons', when considering the effectiveness and/or relevance of public sector performance measurement systems. He points to the problems of clarity, consistency, contingency, measurability, controllability and reductionism that may occur, and to the stifling of innovation, ambiguity, displacement, omission and conflict that may result from the enforcement of such systems.
4. *Performance measurement in specific (nationalised) industries:*
   Lapsley considers issues such as:
   - which mix of key performance indicators is optimal,
   - the tendency to concentrate on inputs,
   - the danger/natural tendency towards budget 'padding',
   - the problem of 'general' objectives – tenuous links to key performance indicators,
   - the problem of over-bureaucracy, data overload, 'death by 1000 initiatives',
   - the effects of patients, citizens, and customer charters in massaging of information and compartmentalization, and
   - the tendency for concentration on measures of efficiency rather than effectiveness and equity.

5. *Performance measurement in the future:*
   Lapsley comments that, in the future, we will probably see 'more of the same', but many issues need to be resolved. (Note that the current UK administration, the Labour Party, has slowed the 'privatisation' process a little.)

Coad, A.F. (1999) 'Some survey evidence on the learning and performance orientations of management accountants', *Management Accounting Research*, 10: 109–135.

Coad suggests that management accountants are not the proactive business consultants (skilled in design/implementation of systems, involved in business decision processes and innovation) that the literature suggests they should be. Maybe this is because they have a *performance* rather than a *learning* goal orientation:

- A *performance goal* orientation is a concern with achieving positive evaluation from others – this leads them to fear poor outcomes and thus they tend to avoid challenges. They may suffer from anxiety, defensiveness etc when difficulties are encountered.
- A *learning goal* orientation is a concern with increasing their *real* competence – they are interested in work, curious, and not too bothered by mistakes.

He also suggests that this (suboptimal, undesirable) goal orientation may be due to management accountants' perception of their leaders' behaviour. These conclusions were based upon a postal questionnaire based survey, which is in the process of being supported by a case study based investigation.

Coad comments, based on the literature, that goal orientation may be contingent upon environmental conditions and personal attitudes to or interpretations (social constructions) of events.

Coad proposes that management accountants who are *involved* are less likely to have a performance goal orientation, and those management accountants who see themselves as *independent* are more likely to have a performance goal orientation. He argues that many of the 'new' ideas relating to management accounting (ABCM, theory of constraints, value chain analysis, balanced scorecard, kaizen, etc.) have not been taken up by management accountants. He argues that this failure to embrace change may partially be explained by the goal orientation of management accountants. (i.e. predominantly a *performance* goal orientation).

He argues that it is *leaders* who should, by example, inculcate a *learning* goal orientation in management accountants and managers. Leaders, he argues, should be more *transformational* and less *transactional*, thereby stimulating innovation and questioning of assumptions via *inspirational* motivation. He comments that, in recruiting and retaining management accountants, attention needs to be given to which type of goal orientation is required for the work area intended. He indicates that leaders may exhibit both transactional and transformational leadership, depending upon circumstances.

He also argues that there are important implications for the *training* of management accountants. Existing training emphasis technical and *domain-specific skills*, with a scarcity of broader, *intellectually creative aspects*. Both sides, he exhorts, need to be developed.

Emmanuel, C.R. and Gee, K.P. (1982), 'Transfer pricing: a fair and neutral procedure', *Accounting and Business Research*, Autumn: 273–278.

Emmanuel and Gee argue for the use of a market-based transfer pricing approach on the grounds of its being the fairest approach and being verifiable by managers. They recognise, however, that fairness/neutrality might be compromised as:

- internal markets may be (are most likely to be?) imperfect;
- transfer prices tend to be agreed for time period, whereas external market prices are changing constantly;
- if the selling division is working below capacity, problems (or deadlock) might be encountered relating to what represents a *reasonable* transfer price between the external price and the in-house costs.

They construct a model of a 'fair transfer price' based on a two-instalment transfer charge which would consist of a charge based upon the selling division's variable cost per unit, and a period cost (charged *ex post*, at the period's end) which is based on the quantity transferred and which takes account of errors in the discount (below market price) allowed in the transfer price because of erroneous assumptions made (about quantities, etc.) at the year's commencement. Emmanuel and Gee argue that such a model does not require accurate market price inspection in advance (as the period cost is calculated *ex post*), and avoids the need for negotiation (as all errors are put right *ex post*) – although the 'discount' still needs to be negotiated in advance. Under such a regime, they explain, the selling division, if it has spare capacity, will resist setting a transfer price below market price – this should be allowed for in the model's period cost calculation that includes a 'lost contribution' charge.

They identify some shortcomings of their model:

- The period (including the various adjustments) may be distorted by significant differences (e.g. in size) between internal and external markets.
- The price which the buying division's manager would charge to external and internal markets would differ because of the different respective risk premia, and this might lead to distortion of the transfer price.
- How should the true production capacity of the selling division be defined? This would cause obvious problems for the calculation of the period cost.
- The model may lead to inefficient marketing by the final division if transfer prices are high and the final product seems to make a loss (although it might generate some contribution).
- Distortion will be caused by the different cash-flow implications of internal and external markets.
- The buying division may require more than one source of the intermediate product, for safety's sake – hence distortion of the transfer price.

Kaplan, R.S (1983) 'Measuring manufacturing performance – a new challenge for MA research', *Accounting Review*, LVIII: 686–705.

Kaplan draws attention to the non-financial aspects of performance control, particularly emphasising the issues of *quality* and *stock levels.* He argues that management accounting techniques (in the 1980s) were based on mass production rather than the more flexible, diverse methods used in many industries today – for example, the USA learning from Japanese production practices and philosophies. Short production runs, flexibility, and reducing stock levels must all, he argues, be taken into account by the management accountant in future, as must measures indicating technical innovation, supplier and customer relations, and efficiency.

Kaplan refers to the inadequacy of economic order quantity models (see below) for capturing the true costs of excessive stocks and refers to the ideas inherent in just-in-time. He focuses on 'missing measurement', for example with regard to:

- quality – zero defects (as in just-in-time, total quality management, etc.);
- stock (inventory) – degree to which uncertainty can be reduced (and therefore the need for stock);
- productivity (i.e. *not* costs).

Kaplan says that management accountants must focus on the new product technologies, (e.g. CAD/CAM, flexible manufacturing systems, robotics, etc.) and that the focus of performance measurement differs over a product's life cycle (e.g. the need for flexibility in the early stages of a product's life). He criticises the 'automatic' use of discounted cash-flow narrowly (taking a narrow view of financial effects) without consideration of the broader issues involved in an investment decision which are, of course, more difficult to measure. He suggests that financial 'experts' have a tendency toward myopia.

Kaplan also suggests that reward systems should be tied to achieving strategic, rather than only financial goals – though this has the problem that shareholders tend to think in financial terms.

He goes on to suggest a range of research objectives based on his above observations, for example:

- new management accounting procedures designed to replace the old standard costing approach;
- new management accounting procedures to deal with shorter production runs, increased flexibility and the greater percentage of fixed costs found in modern production environments;
- new measures of productivity (probably non-financial);
- new measures related to achieving higher quality;
- new measures designed to promote optimal stockholding;
- improved capital budgeting procedures to incorporate wider effects, uncertainty, the costs of reducing uncertainty, etc.;
- the need for management accountants to gain a good understanding of the evolving production environment.

Gould, S. (2002) 'Rough guide', *Financial Management*, April: 30–31.

Gould notes the growing popularity of the EBITDA (earnings before interest, taxation, depreciation and amortisation) but cautions against using it carelessly, drawing attention to some of its flaws.

The increasing use of EBITDA is partially due to use by investors and analysts as the result of an increasing 'cash is king' attitude amongst such parties. Increasingly, EBITDA is being included within the published annual report of companies (around 16% at the time of Gould's article, including such large companies as Cable and Wireless, BT, Vodafone, BT, and Reuters).

Gould notes that EBITDA has the tendency to flatter performance and may therefore be used for this end. He points to the particular popularity of the measure within start-up and telecoms companies disguising the fact that such companies may in their early years be making no profit. He argues that the use of EBITDA may have given an early warning of the problems at Enron, since its reported profit figures disguised the fact that they were not backed up by any cash generation.

Conversely, Gould identifies that EBITDA is not a direct measure of cash generation (and thus not a direct indicator of a company's ability to service its debt). Additionally, the fact that EBITDA is an unofficial measure of performance allows it to be calculated in a number of ways, to the particular firm's advantage. Gould gives examples of such variations in calculation.

Keef, S. and Roush, M. (2002) 'Does MVA measure up?', *Financial Management*, January: 20–21.

In discussing the use of the market value-added (MVA) approach, Keef and Roush suggest that a main reason for its use is that it focuses upon the maximisation of shareholders' welfare. He notes that MVA's acceptance as a performance measurement technique is evidenced by Fortune magazine's having reported the rankings of companies, based on their MVA performance, since the early 1990s.

Keef and Roush refer to a seminal definition of MVA given by Stewart (1991) as 'the difference between a company's fair market value, as reflected primarily in its stock price, and the economic book value of capital employed.' Keef and Roush define economic book value, in this context, as 'the best estimate of the monies shareholders have invested in the company. It consists of the sum of the monies subscribed for new shares, together with retained earnings, which are profits that could have been paid out as dividends, but have been reinvested for shareholders'.

Keef and Roush suggest that part of MVA's popularity may be due to its apparent ability to convert accounting numbers into measures of *economic* value, that is, to be a measure of 'true' economic performance.

Keef and Roush criticise MVA in several respects:

- MVA is a 'hybrid' performance measure in that it is partly *ex post* and partly *ex ante*, and thus may give unclear signals regarding what it is actually measuring.

- MVA is essentially the present value of future EVA. They argue that there is no systematic link between the cost of an investment and the NPV that it creates (small investments can create large NPVs and vice versa). They argue that the value created by an investment is no more or less important than its cost. It is the net effect that is important. Secondly, they criticise MVA for incorporating economic book value which they argue includes past sunk cost aspects.
- The evidence suggests that MVA is of limited value in predicting the financial future of a firm, Keef and Roush arguing that strategic decisions, rather than the assets employed, by a firm are more important in determining share prices.
- MVA is distorted by the size of the company, therefore a size-adjusted MVA calculation would be more appropriate.
- The MVA of the firm represents the MVA of the shareholders who bought their shares when the company was set up. What, ask Keef and Roush, is the MVA of shareholders who have acquired their shares since then? They answer that there will be almost as many MVAs as there are shareholders, each shareholder having a different MVA.

They conclude that, rather than attempting to maximise MVA, an imperfect measure, one should concentrate on the matter that really interests shareholders: maximising the orthodox risk-adjusted abnormal return.

Azofra, V., Prieto, B. and Santidrian, A. (2003) 'The usefulness of a performance measurement system in the daily life of an organisation: a note on a case study', *British Accounting Review*, 35: 367–384.

This paper takes a case study approach to the use of performance indicators by a Spanish subsidiary of a North American multinational. The plant had turnover of $87 million and employed 340 people. Its sphere of operations was car production for such companies as Volkswagen, General Motors and Renault. Managers saw the plant as operating in a 'war economy' (p. 370) where error led to loss of profits and potential impact on the level of employment. Initial stimulus for change came from a major customer.

The indicators were designed in the Spanish plant and were the result of negotiation and consensus in the plant. The primary objective of such changes was to motivate behaviour. The paper points out the substantial competitive pressures that companies are under and that these have led to substantial modifications of productive processes. Such approaches include TQM and JIT, which seek rationalisation of the production cycle as well as continuous improvements in quality, time and cost. It is also seen as important to recognise that such practices cannot be introduced in an isolated and unconnected way but must also be accompanied by innovations in other areas of the organisation. Such changes are seen as including a need to develop both qualitative and quantitative measures, as the

use of financial indicators alone to assess performance is seen as inadequate. The system in the paper is known as Performance Indictors System for Continuous Improvement (PISCI) and is divided into five areas – Finance, Materials, Human Resources, Production, and Quality.

The principal characteristics of the system introduced were:

- A combination of financial and non-financial indicators (164) which are revised annually.
- Workers are seen as owners of at least one indicator and have to answer for both its evolution and the actions needed to correct deviation.
- Each indicator has a comprehensive definition including name, area to which it is linked, code, unit of measurement, how calculated and key individual accountable.
- Data exchange between areas through computerised systems to improve information flow and to detect potential manipulation.

The paper concludes with the view that the inclusion of non-financial performance indicators is a valuable means of disaggregating strategy and communicating to workers the objectives of the company. Despite the large number of indicators, there seems no confusion or tension and they are seen as a valuable tool to mark responsibilities and involve workers, thus increasing the potential motivation of the workforce. Head office strategic control is limited to 12 indicators as internal management at plant level influences internal behaviour through both monetary (bonus incentives) and non-monetary rewards (gifts and congratulatory letters).

Case Study: Callas plc

Callas plc is a large company that manufactures and sells a wide range of goods to the clothing and personal accessory markets. It has a range of retail outlets across the UK and has recently expanded its retailing and manufacturing activities into mainland Europe. Callas plc's current product range is aimed primarily at the under-20, high street fashion market. Its products have been losing their appeal to this sector in recent years and a new marketing team has recently been appointed in an attempt to revitalise sales. The new team has spent a significant amount of time and money on a new televised promotion/marketing campaign although, it argues, it is too early yet to see the results of the campaign.

Callas plc's main administrative, accounting/finance and marketing activities are dealt with by its head office in London. A certain amount of authority for local advertising,

manufacturing management, product distribution and human resource management (HRM) matters is, however, given to regional headquarters based in Cardiff (Wales), Glasgow (Scotland), Lille (France) and Borlange (Sweden). Callas plc's head office management insist that, wherever possible, administrative, financial, reporting and HRM procedures are standardised across all regions.

Managers in the retail outlets are paid bonuses based upon their outlets' quarterly operating profits and, additionally, a regional managers' profit-sharing scheme is in place which is related to the company's after-tax profits for the past year. Retail operative staff and other administrative staff are not entitled to participate in the bonus scheme, although they are able to earn overtime pay. Additionally they may receive awards for good performance, following an annual individual performance appraisal carried out by their direct supervisors. The profit margins in Callas plc's line of business are not great and this is the justification given by the company for its paying relatively low amounts to its retailing and administrative staff.

A management control system was put into place by Callas plc's central management accounting staff in 1990. The control system is based on an annual budget, calculated at headquarters level, for which regional and outlet managers have responsibility. Monthly management accounting control reports are produced by Callas plc's headquarters which indicate actual and budgeted results for the past month. Managers are required to explain the differences (variances) between actual and budgeted figures to Callas plc's management team, within one week following the month's end. Comparisons are made between the performances of the various outlets and regions of the company, the results of these comparisons being made available to all company personnel via the Callas intranet. An award is made, each quarter, to the manager of the region that has performed best, although the basis of comparison has changed from time to time. The budgeted figures for the month are calculated from the actual budget upon a time-based, pro-rata basis. A pro-forma for the monthly performance report forwarded to outlets is shown below:

Monthly Performance Report – Pro Forma *Date produced:…….*
Region:……
Outlet: …….
Outlet Manager: …….

You are required to explain all variances to Headquarters Management Accounting Division by one week following the date of production of this report.

Product Line	Fashion Clothing			Personal Accessories		
	Actual	***Budget***	***Variance***	***Actual***	***Budget***	***Variance***
	£	£	£	£	£	£
Sales						
Cost of Sales:						
Bought-in materials:						
Consumables:						
Direct Labour:						
Supervision:						
Factory overheads:						
Non-factory overheads:						
Net stock adjustment:						
	.....			.....		
GROSS PROFIT						
Marketing and distribution:						
Product development:						
	.....			.....		
NET PROFIT						
Net profit margin %						
Sales per person						
Sales per m^2						

Managers at both regional and outlet level have complained about the validity of the budgets and variance calculations sent to them by headquarters, but Callas's accountants have responded that, each year, budgets are updated for known trends, inflation, and so on. Additionally, the head office management accountants select outlets, on a cyclical basis, for cost-cutting exercises, in an effort to optimise cost efficiency.

The company announced earlier this year that its strategy is moving towards customer satisfaction as a key issue and that managers at all levels need to ensure that customer satisfaction and product/service quality show a clear improvement year-on-year. The head office accountants made an attempt in 1997 to put into place a set of non-financial performance indicators. This was fiercely resisted by managers at the regional and outlet level who complained that they did not understand what these measures were for and that the mode of calculation was unclear and subjective. A new initiative has now been put in place, by the managing director, who has forwarded a memorandum to all managers instructing them to implement a new set of non-financial measures within the next month. Additionally he has instructed all managers to inform him as to how they could implement the principles of the 'balanced scorecard' within their divisions. The four balanced scorecard perspectives, which the managers are to consider within their divisions, have been identified as follows (based on Kaplan and Norton, 1996: 9):

Perspective	Meaning
Financial	'To succeed financially, how should we appear to our shareholders?'
Customer	'To achieve our vision, how should we appear to our customers?'
Internal business process	'To satisfy our shareholders and customers, what business processes must we excel at?'
Learning and growth	'To achieve our vision, how will we sustain our ability to change and improve?'

Callas's top management has recently made moves into marketing the business via the Internet, with the intention of an eventual full e-commerce capability.

Additionally, it has been undergoing negotiations with a UK government organisation regarding the supply of large amounts of uniforms for use by government employees. If obtained, this large contract would form a significant part of Callas's UK business and, if successful, this type of business would increasingly be sought in Callas's other geographical locations. Such new business would, however, stretch Callas's UK production and distribution capacities to the limit. It would therefore need to consider other means of servicing the business, such as outsourcing. All government contracts would need to be gained by tendering for contracts against competitors, an unfamiliar aspect of business for Callas.

Management at Callas's headquarters has found it increasingly difficult to make decisions about the company's product and customer mix. Despite the company having made and sold more in recent years, its profitability has declined. The management team feel that the company's new customer-focused strategy will have a positive effect but are unsure of how to gauge the effectiveness of its efforts in the short to medium term.

Regional managers have been complaining recently that they are under constant pressure from their production staff who argue that the cost targets within which they are required to operate are impossibly tight. The regional managers have stressed that a complete review of the cost targets should be undertaken in order to establish which products are worth manufacturing. Callas's financial director has recently become aware of the concept of target costing and has instructed the head office management accounting team to investigate the potential of this approach.

Based upon the above information:

(i) Discuss the possible behavioural, motivational and ethical issues that might arise out of Callas plc's use of its management accounting control systems.
(ii) Given the company's new strategic focus upon customer satisfaction, analyse the type of information which managers at regional and outlet levels might require in order to monitor their performance and to control operations. Give examples of specific performance indicators that might be usefully applied, within each of the balanced scorecard perspectives, and discuss the advantages/disadvantages of such indicators.
(iii) Critically analyse the potential implications for Callas plc's management accounting systems of the possible changes in the nature of the company's business.
(iv) Outline the possible value of applying a target costing approach within Callas plc.

Information related to Callas Plc – Period since May 2003

Several developments regarding Callas Plc have taken place since May 2003.

Firstly, sales in the personal accessories aspect of the business have decreased, although profits seem to have been relatively unaffected (as far as can be ascertained from the accounting system). In the fashion clothing side of the business, the opposite effect seems to have occurred, i.e. sales have increased but profitability seems to have decreased.

At the manufacturing level, the monthly performance reports have indicated a continuing trend of increasingly adverse cost variances, but production managers have been unable to ascertain the reasons underlying this. This has led to an escalating amount of pressure upon production managers from the head office staff. A member of the head office management accounting staff has suggested that a system of activity based cost management (ABCM) might assist in the resolution of this issue.

Callas Plc has been successful in obtaining its first government contract for the supply of uniforms and has already tendered for a further four major government contracts, two of which are in the UK, one in Sweden and one in France. Having obtained the first contract and now preparing for success in the other tenders, the company is reviewing its operations to maximise the chances that the new contracts will be profitable. The production managers within the manufacturing plants have warned that, if all tenders are successful (and this seems likely), the company's production capacity will be exceeded greatly. The head office management team has been considering, therefore, strategies to overcome this problem. Their favoured option, at present, is to outsource at least 50% of the government contracts and to cut costs, wherever possible, by launching a further

efficiency drive aimed at the manufacturing plants. The government sector business is very price competitive and it has been suggested, by an external consultant, that the introduction of *target costing* systems is now an urgent requirement.

The e-commerce side of the business has taken off and is growing quickly. Initially, head office staff manned the Internet-based business, but the head office has now passed this responsibility to the retail outlets, on the basis that the outlets are more skilled in selling. The Callas plc website's popularity and competitive strategy was based upon promising delivery times that were faster than those of competitors. While this has been maintained to date, increasing pressure has been mounting upon the company's warehousing and distribution capabilities and some custom has been lost.

Retailing staff turnover has increased markedly during the past few months and the head office management team suspects that this may be caused partly by the relatively low pay levels. Outlet managers, however, feel that a more likely cause is decreased job satisfaction.

Little progress has yet been made on the implementation of Balanced Scorecard (BSC) approaches. Operational managers have argued that they are too busy, under conditions of increased pressure of work, to devote time to a new system that is seen to be inadequately defined, and arbitrary. They have also demanded that, should a performance system based on the BSC be introduced, they would expect to be rewarded adequately. Relationships between the head office, regional offices and outlets have worsened recently, probably due to the increased pressures felt by most staff. An air of conflict between the management accountants and other managers is noticeable and the Financial Director is pondering how matters can be improved.

Based upon the additional information provided post May 2003:

(1) Analyse Callas plc's recent history and discuss the extent to which it demonstrates the use of effective feedback systems.

(2) Discuss the extent to which the application of systems of activity-based cost management (ABCM) and Target Costing might be able to assist in dealing with Callas plc's problems.

(3) Given Callas' plc's plans for the future, and the problems which it is experiencing currently, analyse how improvements to its management accounting information system (MAIS) might assist in the management of the company. Give examples of specific information that the improved MAIS might produce.

Case Study: Fantasy Planet University

Fantasy Planet University is a former polytechnic which became a new university in 1992. One of its major departments is the Business School, which comprises 90 academic staff and 20 administrators. The School is led by a head of school and split into five divisions – Strategy, Enterprise, Accounting and Finance, Human Resource

Management and Professional Courses; the latter teaches the courses provided by the School. Research is carried out in the School but has to be covered by the teaching and consultancy income the School earns, as the research assessment exercise found the quality of research did not reach a sufficient standard to attract government funding.

The budget for the School is approximately £9 million in 2003/04. There are over 5000 full-time equivalent students who are taught on undergraduate, postgraduate and professional courses. In 2003/04, 45% of the income for the School is payable into the centre to support non-teaching departments such as the library, computing and the directorate of the University. Approximately two-thirds of the sum payable to the centre is used to fund support departments such as Finance, while the remaining third is used to provide a Strategic Adjustment Fund and capital projects. The Strategic Adjustment Fund is used to help fund schools where student income is insufficient to meet the schools' costs. Such funding is only provided for a maximum of three years to allow the School to develop plans to turn itself around. After that date the School must be self-financing through whatever means. This includes potentially closure and certainly staff redundancies to bring cost and income into balance.

Up until 2000/01 the Business School was a 'cash cow' for the University but there has now been a downturn in demand for business courses since that date. Due to a feared shortfall in funding across the University in 2000/01, targets for the School were increased by the University's central directorate. In 1999/2000 actual income was £8 million, but the target for 2000/01 was set at £10 million based on increased student numbers. Actual income was £9.5 million. Target income was again increased in 2001/02 to £10.5 million. Actual income was again below target at £9.6 million. The deduction in 1999/2000 for support costs was 40% of target income, but this was increased in 2001/02 to 45%. The target income was reduced in 2002/03 to £9.5 million but actual income fell to £9 million. In 2003/04 target income remained at £9.5 million and in April 2004 it was anticipated that a small surplus would be made in 2003/04. Prior to 2002/03 income was paid by the funding body to the University for teaching purposes on the basis of enrolments. From 2002/03 income is only paid if students complete the assessments set. This means that no funding is available for students who fail to submit any assessment and drop out. The funding body has also reduced the amount payable to try to ensure the University makes efficiency gains. The centre still takes 45% of target income as the contribution to central costs.

The bulk of the costs of the School are staff costs. Supplies and services costs (photocopying, transport, etc.) have been as high as 20% of the expenditure budget. Limited monitoring information is provided during the course of the year and the School has developed its own internal monitoring systems. This has resulted in supplies and service costs being reduced to 12% of the expenditure budget by 2003/04. Additional staff were recruited (5) in 2001/02 and there is a need to find increased

pension costs and national insurance taxes. Staff levels have remained consistent since 2001/02.

The Business School also undertakes consultancy activity. This is commercial work charged at commercial rates and is outside the government grant. The University system is that 20% of the income from consultancy is paid to the University's consultancy company for undertaking the relevant administration associated with the activity, 20% is payable to the Business School, and the balance is payable to the staff member who undertakes the activity. The Business School also employs outside consultants to undertake these activities. The payment system is the same as for internal staff. At the end of the year the Business School's share of the income is transferred to the School from the consultancy company but there is no knowing what this transfer is until the end of the year, although again the University provides a target for the School to achieve.

It is now half way through 2004/04 and the Business School has a cumulative deficit of £2.5 million and has approached the centre for support from the Strategic Adjustment Fund. The University's directorate is currently considering this request.

Finally, the Business School is also to reorganise into four new departments which will act as profit centres in the next academic year.

(i) Identify the main features of the budgetary system outlined above.
(ii) Comment on any advantages and disadvantages that may exist in respect of the features you have identified.
(iii) What would you advise the Business School to do about the situation?
(iv) What would you advise the University's directorate to do and why?
(v) How would you reconcile your advice to the School and the directorate where it differs?
(vi) What issues would you need to consider in establishing the new profit centres?

Case Study: Sioca PLC

Sioca PLC started life as a regional electricity generating company in Ampland, a European country. Such regional companies were nationalised by the Ampland government in 1945 in order to safeguard the reliability of service provision. There was, however, concern that the nationalised electricity service was being operated inefficiently and that costs to the consumer had spiralled upwards. There was a governmental decision in 1990 to reprivatise such service providers in order to motivate them to produce better value for money through the mechanisms of customer choice and competition between providers.

Sioca PLC has been the licensed provider of electricity in the South East Ampland area since 1991 and, during the intervening period, it has responded to relaxations in government regulations such that it now supplies water and gas services to the same geographical area. The nature of Sioca PLC's business activities has thus evolved significantly since the early 1990s. While Sioca PLC still provides electricity to its consumers, it does so via a network of smaller, privately owned generating companies. These companies are entirely separate from Sioca PLC and are dealt with by Sioca PLC on an 'arm's length' basis. In order to supply its customers, Sioca PLC uses the electricity cable network owned by K-Bel PLC, for which it pays a two-part fee which comprises a fixed annual charge and a variable charge based on usage.

Sioca PLC supplies water and domestic gas to its consumers by similar mechanisms. Sioca PLC effectively acts as a licensed 'wholesaler' whereby separate water and gas companies sell their output to Sioca PLC which then sells it to the end-users. In doing so, Sioca PLC must pay the owners of the water and gas supply networks for the use of their distribution networks.

Competition exists within Sioca PLC's operating environment in that, while it is essentially an electricity company which also trades in water and gas, other companies exist which operate in the same markets within the local area. Hydra PLC, the company originally licensed to supply water in the South East Ampland area, now offers electricity and gas supplies, amongst other products, in competition with Sioca PLC.

In addition to the competitive activity which exists for the supply of power and water, several of Sioca PLC's competitors have now widened their product portfolios to include the financial services area, offering personal loans, mortgages, insurance, and so on. While Sioca PLC has not moved into these activities as yet, it is giving serious consideration to including such operations in the near future.

The increasing level, and increasingly diverse range, of competition has had many side effects within Sioca PLC. The advent of competition led to the need for intense marketing activities in order to maintain Sioca PLC's market share. Legislation has made it easy for consumers to change suppliers whenever they decide. There has been a need to attempt to differentiate products and to convince consumers of the quality of the services provided. Pressure to maintain the reliability of the services provided has also increased. Continuous downward pressure on prices to consumers has resulted from two sources: competitors' tactics and government watchdogs' moves to limit excessive profiteering and large price rises.

The cost pressure on Sioca PLC has led to a need for rationalisation, and the company has recently completed the first stage of its 're-engineering' project, which has resulted in the redundancy or forced retirement of approximately 300 staff. Many of the redundancies, however, were carried out on a last-in, first-out basis, with the result that a large proportion of the remaining staff have worked within the industry for quite some time and originate from the period when the company's main line of business was the generating of electricity. Significant staff retraining has been necessary and Sioca PLC has been enlisting the help of several local educational institutions to run training

courses on an *ad hoc* basis as skills shortfalls have become evident. Such training courses have proven to be very expensive and Sioca PLC's board is not yet convinced of their effectiveness.

There has been a considerable amount of movement of senior staff between Sioca PLC and its competitors as the market for capable senior managers has heated up.

Sioca PLC's profits have fallen considerably, year-on-year, during the past five years although it has managed to maintain its dividend yield to date. Its share price has fallen gradually over the same period. It is estimated that, if current trends were to continue, Sioca PLC would have difficulty in stabilising profitability. Given the need for sustained investment in technology in its business environment, the directors of Sioca PLC are becoming concerned about the company's ability to obtain financial backing in future years. Additionally, the government is maintaining a programme of monitoring the quality of services to customers with which Sioca PLC will need to comply. The board has not yet been able to obtain a clear answer from its management team as to whether a service quality shortfall exists in this respect.

Since privatisation, Sioca PLC has developed a large range of sophisticated and complex tariff systems for the purposes of charging its customers in the domestic and commercial sectors. Sioca PLC has developed a far wider choice of tariffs than its competitors in an effort to become more attractive to consumers. Sioca PLC also offers a 24-hour telephone helpline service to all its customers and the majority of its workforce have been equipped with pagers or mobile phones in order to ensure their 'around the clock' availability. Last year, Sioca PLC's board decided to make a one off payment to employees to reward them for their increased commitment to the company.

All managers within Sioca PLC have been given delegated budgets, and managers are expected to control the costs within these budgets strictly. Middle managers receive an annual bonus based on the total savings made during the control year, while senior managers receive bonuses in the form of Sioca PLC ordinary shares. The senior managers' bonuses are calculated in relation to Sioca PLC's after-tax profit levels for the previous year.

Sioca PLC has recently experienced some trouble in dealing with customer complaints because of higher than previous levels of absenteeism and sick leave. It has also suffered some poor publicity recently related to its responses to customer queries and complaints. Complaints from customers have covered a range of matters including slow responses to call-outs, failure to complete repairs satisfactorily first time, unprofessional or abrupt telephone manner of helpline staff as well as matters such as frequent power cuts or surges, water shortages and gas pressure falls.

Sioca PLC's managing director, Joules Van Den Graaf, has spearheaded a number of investigations in recent months in an effort to sort out some of the company's problems. In investigating the problem of the poor publicity mentioned above, he was informed by the company's senior managers that the appearance of adverse articles in the local press was the first that these managers had known about the customer complaints problem.

They were, they argued, too busy managing the physical provision of electricity, gas and water services to be able to allocate time to such problems.

The company's middle managers complained that they had more than enough work with which to fill their time, given the complex nature of their day-to-day tasks and the need to control their budgets. Several such managers commented that much of their time was spent poring over their weekly budget reports, arguing with Sioca PLC's accountants about the amount of overheads with which they had been charged and looking for ways to reduce their overhead costs. Most middle managers seemed to have little idea about how the overhead costing system really worked. There was a common attitude amongst middle managers that there was little to be gained from questioning the validity or reliability of the costing system as the Sioca PLC accountants (the 'budget police' as they were called by these managers) made it very clear that a clear understanding of the company's complex costing system required an accountant's mind. Many of these managers seemed to have reached the point whereby they had given up attempting to discuss such matters.

In the course of his investigations, managers at all levels within Sioca PLC had complained to Mr Van Den Graaf that they had insufficient information to manage effectively. This Mr Van Den Graaf found puzzling. He had been made aware of the comprehensive budget reports received by managers each week. Indeed, it had taken him more than two hours to make sense of one such report, although he had put this down to his lack of experience of the detailed complexities to which the report had related. Van Den Graaf had queried why this weekly report contained so many estimated figures. The accountant responsible for producing the report had replied that the fault lay with the manager of the cost centre to which the report related. There was a general problem, the accountant explained, that managers did not seem to be able to understand or take an interest in the company's accounting systems. Many of these systems were well proven, he argued, having been established in the company's early days and having been expanded and further sophisticated as time had passed. Although many detailed forms were sent out to managers every month, so that they could enter the details required to allow the calculation of accurate apportionments and so on, managers seemed to have little commitment to the system. This lack of commitment had, the accountant explained, been the main reason why no attempt had been made to computerise the data entry process.

In an attempt to air these problem, and possibly move towards alleviating some of them, Mr Van Den Graaf had called several joint meetings of accountants and managers. On each occasion it had been difficult to stick to the agenda, as the meetings tended to degenerate into unproductive slanging matches. Neither the management nor accounting parties seemed to be able or willing to see the other's viewpoint. Managers complained that accountants used the costing systems to 'confuse and demoralise the managers and to increase the power of accountants', while accountants argued that such systems were 'in existence to protect the investors, not to support the managers' ailing departments'.

Mr Van Den Graaf had done his best to discharge the atmosphere at the meetings but was left feeling that he needed to generate some powerful new ideas in order to move the company forward and to give it the potential to succeed.

1. Analyse the implications of recent changes in Sioca PLC's operating environment which are likely to affect the effectiveness of its management accounting information systems (MAIS).
2. Identify the principal MAIS components which Sioca PLC would require in order to achieve its immediate and longer-term control and decision-making objectives.
3. Discuss the behavioural, motivational and ethical aspects of Sioca PLC's activities, and of the MAIS which you have specified in your answer to question 2.

Additional Information for the Period from February 2003 to August 2003.

The board of Sioca PLC made a decision in March 2002 to move into the financial services markets in order to compete effectively. Among its initial developments in the financial services markets were:

- the provision of personal loans to private individuals.
- home buildings and contents insurance.
- consumer goods repairs insurance (on such goods such as personal computer systems, 'white goods' etc).

Additionally, the company has commenced acting as a management consultancy organisation although, in this respect, it acts as a middle-man whereby it sub-contracts educational organisations and small firms of accountants and other professionals to carry out consultancy and training activities for it, under the Sioca Consultancy name. Apart from initiating the contracts with, and paying fees to, the sub-contracting bodies, Sioca PLC has little direct involvement in these activities.

Similarly, Sioca PLC's new activities in the loan finance and insurance markets are, in reality, largely delegated to banks and insurance companies already operating within these fields. The fees paid to the banks and insurance companies consist of a fixed management fee, fixed in advance and based on estimated business volume, plus a variable commission based on amounts of loan/insurance raised.

Staff morale problems have intensified within Sioca PLC over the past 6 months. The company has been taken to court by several employees on the grounds of its allegedly having placed employees under excessive stress. Many of its longest serving employees have sought early retirement recently and a considerable number of intelligent but inexperienced young staff have been recruited to replace those staff who have left.

To a large extent, the majority of Sioca PLC's staff are involved in administrative, marketing and public relations activities and the already heavily criticised weekly budget

reports are seen, by most staff, to have become even less useful than before. A number of managers have created their own unofficial management accounting systems and therefore tend to ignore the official system. Indeed, several managers have argued strongly that they should no longer be charged with the costs of the official system and this has resulted in a higher charge being levied upon the remaining system users, halfway through the budgeting year. The remaining system users have been criticised heavily for their failure to control overhead costs.

The training of the new young managers has concentrated on the use of the existing reporting systems although some of these managers have commented that they need to be involved in the design of a new management information system The accounting department has argued that the new managers lack sufficient experience to enable them to make a meaningful input and that thus the management information system should remain the province of the accounting department for the time being.

Given the wide range of Sioca PLC's activities, an Assistant Director position has been created to head up each of the company's main activities, e.g. electricity services, water services, insurance services etc., and each of these activities is to be treated as an investment centre (even though all major investments must be authorised by Head Office). Each assistant director is responsible for the return-on-capital of his/her activity and for developing new markets and products. Several of the new assistant directors have already complained that the existing budgeting system does not help in the latter respects.

The accounting department has warned that the degree of uncertainty experienced in many of the company's newer markets will lead to less frequent reports being available, if reporting accuracy is to be maintained.

A bonus system for both assistant directors and key staff within their activities has been introduced whereby bonuses are based upon the overall turnover generated by the activities. This seems to have had some positive effects in increasing turnover.

At a recent meeting of the board of Sioca PLC, concern was expressed that, despite Sioca PLC's having expanded its range of activities greatly, its profitability had continued to decrease.

In relation to the additional information provided subsequent to January 2003:

1. Critically analyse the events which have occurred *within* Sioca PLC since January 2003 and the management accounting information systems related problems that have resulted.
2. Discuss the extent to which Sioca PLC's new products and markets might affect the nature of the management accounting information it will require in future.
3. Write a brief report to Sioca PLC's managing director which provides an action plan designed to overcome the problems which exist, or may exist in future.

Be specific about what needs to be done and who will be involved.

Questions

1. Discuss the extent to which 'strategic management accounting' represents a new dimension of management accounting.
2. Critically examine the interrelationships between motivation and performance appraisal and discuss the implications of such interrelationships for management control systems.
3. Examine the extent to which it is possible for a multinational organisation to specify an optimal transfer pricing system.
4. For a university library that provides services to other university departments:

   (i) explain, and evaluate the suitability of, the transfer pricing mechanisms that might be used to charge library services to other departments;
   (ii) outline the effects that the resultant library charges might have on the levels of innovation and creativity within the client departments.

5. As the management accountant of an international distribution company, you have been asked to make a brief presentation to the company's senior management on the nature and coverage of strategic management accounting (SMA). Prepare some notes on the content of the proposed presentation which should:

   (i) discuss the coverage of SMA;
   (ii) analyse the claimed advantages of SMA;
   (iii) discuss the possible problems of implementing SMA within the company.

6. Assess the relevance to today's management accountant of the economics-based analysis of the transfer pricing problem. Assess critically the alternative practical approaches to the establishment of transfer prices.
7. Discuss the extent to which activity-based cost management and business process re-engineering fall within the domain of management accountants. What do you consider to be the main limitations of these approaches?
8. It has been suggested that the nature of management accounting is changing such that management accounting may cease to exist as a separate discipline in future years. Give, and justify, your opinion on whether management accounting is doomed to extinction.
9. Examine the management accounting related difficulties encountered within an internationally divisionalised organisation.
10. 'Strategic management accounting is merely *good* management accounting'. Critically assess this statement.
11. Emmanuel and Gee (1982) discuss the strengths and weaknesses of a two-part, fairer approach to setting transfer prices. Discuss the validity of such a transfer pricing approach for the recharging of the computer services department of a health authority to other departments within that authority. Your discussion should include an evaluation of the suitability of other transfer pricing approaches that might be used in this context.

12. (i) Discuss the extent to which practical methods of setting intracompany transfer prices represent a compromise.
    (ii) Critically analyse the extent to which transfer pricing is relevant within a public sector organisation of your choice.

13. Outline and discuss the economic, practical and ethical aspects of multinational transfer pricing.

14. Wilson (1995) proposes that 'The emergence of strategic management accounting … is a recent phenomenon and there is, as yet, no unified view of what it is or how it might develop'. Discuss.